



Radio Communications for Industry

State ID: SC-MES-V1384

About this course

This course is aimed at personnel in the **mining, oil & gas** industry, and in both **public and private defence and security** sectors.

You'll benefit from this workshop if you are involved in **SCADA, instrumentation, process control** and other **control/monitoring systems** roles such as:

- Instrumentation technician/Instrumentation and control engineers
- Electronic technicians
- Electrical engineers
- Process development engineers/Process control engineers
- Control systems sales/applications engineers
- Consulting or Design engineers
- Maintenance supervisors
- Project engineers

Gain these skills

- Implement simple RF links for control and monitoring system
- Understand the jargon, terminology and latest techniques of wireless communications
- Design (using software tools), install and commission (using dedicated test equipment) an effective RF link
- Perform simple path loss and gain/loss calculations in decibels
- Learn how to troubleshoot wireless system problems using RF test equipment
- Select the main components of RF links
- Conduct a site survey
- Implement effective security on wireless systems
- Explain infrastructure requirements for RF systems

Topics covered including Practical Exercises

- Communication system modes
- Basic elements of a wireless link
- Production and composition of an electromagnetic wave
- Free Space attenuation vs. frequency
- Factors influencing propagation of radio waves
- Multipath interference effecting a wireless link
- Frequency spectrum allocation
- Gain and loss decibel measurements/calculations with examples
- Modulation techniques with a practical exercise on digital modulation performance in a wireless environment
- Spread spectrum techniques
- Multiple access techniques
- Antenna types and selection, Diversity methods
- Transmission lines types and selection
- Data communication standards
- Typical RF test equipment used for troubleshooting, system design and commissioning
- Typical RF measurements with practical examples such as VSWR, return loss, insertion loss, etc.
- Wireless system design procedure and infrastructure requirements
- Practical exercise in wireless system path profiling using software tools
- Practical exercise on the implementation of a wireless system design based on industry practice

Details

Important information

The delivery format of this course is a combination of online theory and on campus practical component. The practical component can be completed over two half days on campus by appointment.

Fees and charges

\$450.00 including GST

Please note, fees are subject to change.